

F1 The Measurement of Open Apices of Third Molars to Test Chronological Age in Living Subjects Over 18-Year-Old

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After attending this presentation, attendees will be able to evaluate having arrived at a birthdate of 18 years of age in living subjects.

This presentation will impact the forensic community by illustrating a new method to determine if an individual is 18 years of age.

This paper concerns a method for assessing adult age based on the relationship between age and the third molar maturity index (I_{3M}) which is related to the measurement of the open apices of the third molar. Furthermore, this method was compared to those based on Demirjian's stages G and H. The sample consisted of 906 caucasian individuals aged between 14 and 23 years (53.6% females and 46.4% males). Orthopantomographs (OPGs) were analyzed by two observers and calibrated by means of the concordance correlation coefficient for the reproducibility of the third molar maturity index (I_{3M}) and k statistics for reproducibility of the Demirjian stages. Probabilities of an individual of being older than 18 years of age (adult age) were derived using the measurements of the third molar maturity index (I_{3M}). These results were exploited to set a threshold value to assign an individual to juvenile or adult age. A cut-off value of I_{3M} =0.08 was taken. The sensitivity of this test was 70% and specificity was 98%. Furthermore, the proportion of individuals with a correct classification was 83%. The results of the test showed a better specificity when compared to the choice of stage G and a better sensitivity when compared to the choice of stage H for adult age.

Age Determination, Third Molar, Forensic Odontology